

Precision Strike Summer PEO Forum

Capabilities Integration Direct

***Precision Engagement -
"Creating Effects Based Operations for Future
Battlefields"***

AIR ARMAMENT CAPABILITY FOR THE FUTURE



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PRECISION STRIKE CAPABILITIES For The FUTURE BATTLEFIELDS

Capabilities Integration Direct

- ❑ **Today's Weapons Are Excellent...but We Need to Continue Improving to Prepare for Future Conflicts**
- ❑ **Current Precision Weapons Have Filled Many Capability Objectives**
- ❑ **Key Objectives Still Remain Where Precision Engagement Is Critical**
 - **Counter CBRNE**
 - **Urban Attack/Close Air Support**
 - **Long Range Strike**
- ❑ **Must Start Planning Today to Meet Our**



OVERVIEW

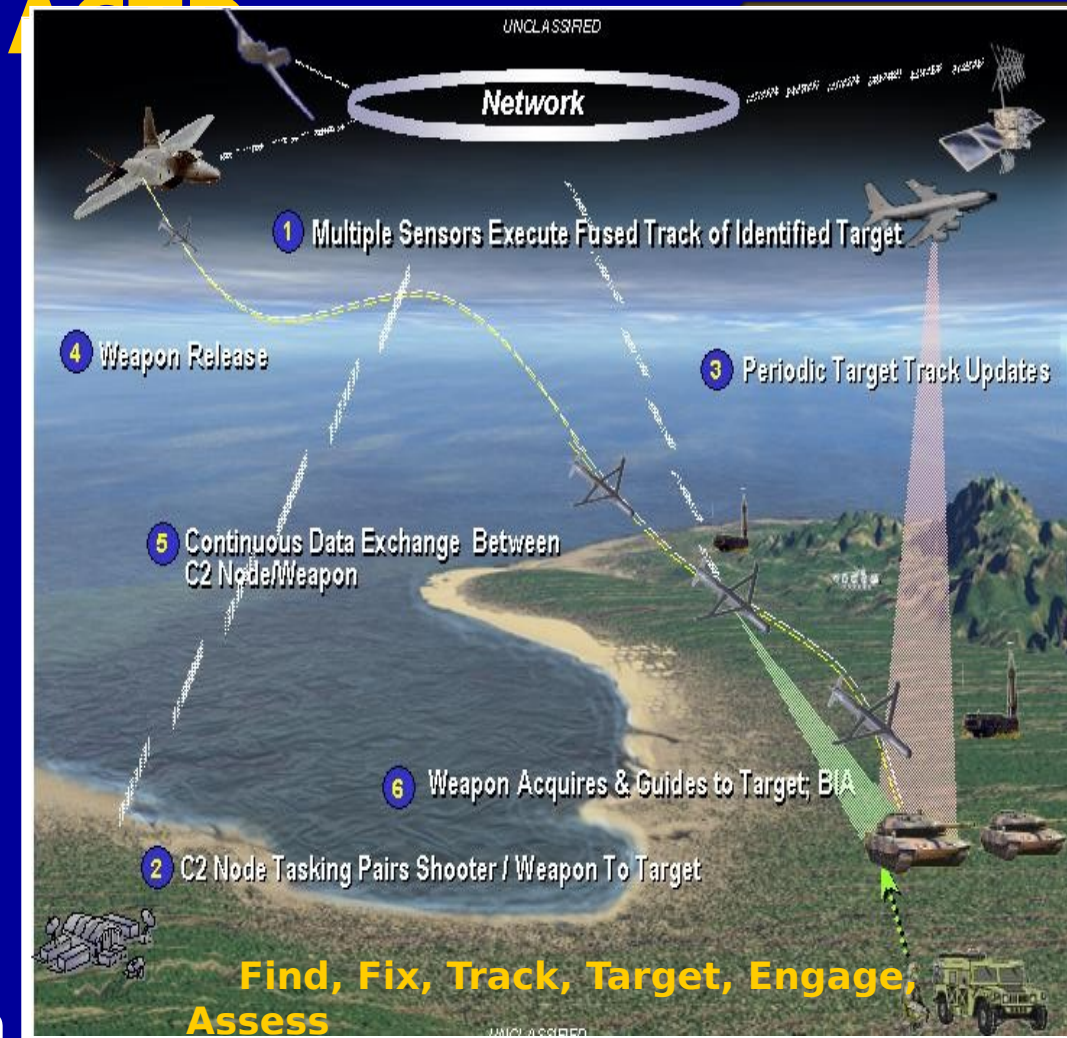
Weapons Integration Direct

- **Near Term Capability Enablers**
 - **Weapons Data Link Network ACTD**
 - **Universal Armament Interface (UAI)**
- **Mid to Far Term Capabilities**
 - **Counter-CBRNE Systems**
 - **Urban / Close Air Support Weapons**
 - **Long Range Strike**
- **Emerging Technologies**
 - **Directed Energy**



WEAPONS DATA LINK NETWORK (WDLN)

Capabilities Integration Direct



- Networked Weapons Provides Opportunity for Revolutionary Improvements in Warfighting Capability
- Interoperability Is Key to Successful Integration
- Joint FY05 ACTD Develops Architecture and Message Standards
- Demonstrates Weapon Integration into Network Centric

Pathfinder for Network-Enabled Weapons

WHY NETWORKED WEAPONS

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- ❑ **Weapon In-Flight Target Update**
- ❑ **Weapon Retargeting**
- ❑ **Weapon In-Flight Tracking**
- ❑ **Weapon Bomb Impact Assessment
(BIA)**
- ❑ **Weapon Abort**



PATHFINDER DEMO

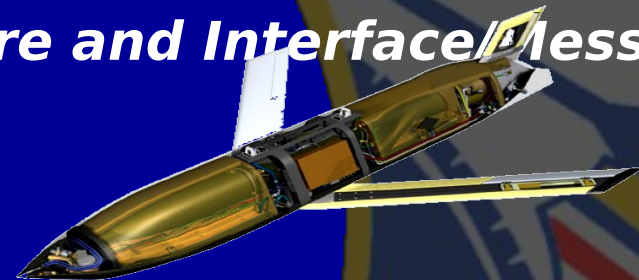
WEAPONS

Capabilities Integration Direct

- **Initial Networked Design Concepts Developed and Demonstrated**
- **Compliant with Network Architecture and Interface/Message Standard**



Small Diameter Bomb (SDB)



Joint Air-to-Surface Standoff Missile (JASSM)



Joint Standoff Weapon (JSOW)



Wind Corrected Munitions Dispenser (WCMD-ER)



Miniature Air Launched Decoy - Jammer (MALD)
(Not Demonstrated)

UNIVERSAL ARMAMENT

INTERFACE TODAY'S CHALLENGE

Capabilities Integration Direct

- ❑ Each Weapon Has Its Own Unique Interface Requirements and Its Own Interface Control Document (ICD)
- ❑ Weapon Integration Activities Are Tied To Platform Pre-Planned OFP Update Schedules
- ❑ Finding: Weapon Interfaces With Aircraft Operational Flight Programs (OFPs) are Driver of Integration Schedule/Cost

UAI Addresses the Challenge

WHAT IS UAI?

Capabilities Integration Direct

- ❑ **UAI is an Initiative to Develop Standardized Software Interfaces in Aircraft, Weapons and Mission Planning**
- ❑ **Industry Consortium Formed to Develop the Standard**
- ❑ **Decouples Weapon Integration Schedules from Aircraft OFP Update Cycle**
- ❑ **Reduces The Effort Required To Integrate Weapons Onto Platforms**

UAI is a Process Improvement that Reduces Weapon Integration Costs &

UAI

Capabilities Integration Direct

STATUS

- ▣ **Baseline ICD Developed And Being Verified**
- ▣ **F-15E Will Become UAI Capable During Suite 6**
 - **Implementation Currently In Progress**
- ▣ **JASSM, JDAM - First UAI Weapons**
- ▣ **Others To Follow Based On ACC Approved Roadmap**

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Capabilities Integration Direct

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COUNTER - CBRNE CONCEPTS

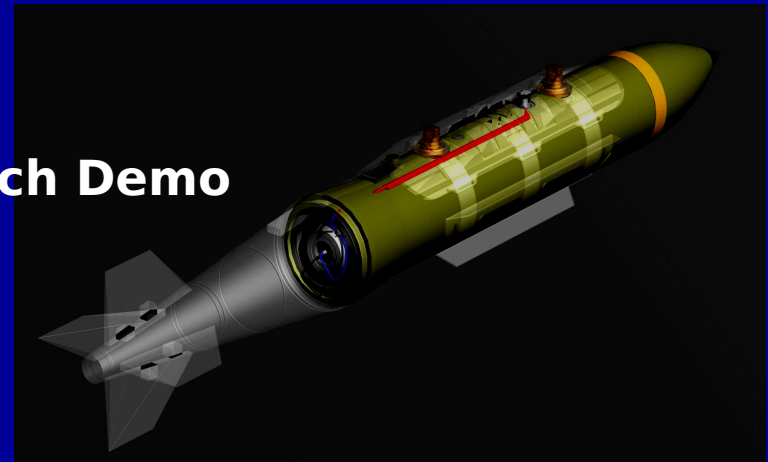
- **OBJECTIVE:** Capability To Defeat CBRNE Targets While Minimizing Collateral Damage
- **REQUIREMENT:**
 - Draft Capabilities Development Document In Coordination
 - Increment 1 - Disrupt And Deny
 - Increment 2 - Bulk Neutralization



COUNTERFORCE AGENT DEFEAT - INCREMENT I

Capabilities Integration Direct

- ❑ **OBJECTIVE:** Defeat Hardened Chemical and Biological Storage Facilities
- ❑ **ASSUMED REQUIREMENTS:**
 - Ability to Engage Hardened Weapons of Mass Destruction Targets
 - Target Disruption - Agent Denial
 - Minimize Agent Release - Low Collateral Effects
- ❑ **DESCRIPTION:**
 - Various Warheads, Legacy Guidance, Fuzes
 - Potential Fills: High Temp Incendiary, HE Burster Charge, Submunitions, White Phosphorus, Others To Be Assessed
- ❑ **SCHEDULE:**
 - FY06-FY08 AFRL Advanced Tech Demo
 - FY08 POM Submittal
 - FY08 SDD Start
 - FY 12 Production Start



C-CBRNE. . . .

COUNTERFORCE AGENT DEFEAT - INCREMENT

Capabilities Integration Direct

- ❑ **OBJECTIVE:** Capability to Defeat Chemical and Biological Storage and Production Facilities
- ❑ **REQUIREMENT:**
 - Ability to do Bulk Neutralization of Chemical and Biological
 - Minimize or Negate Collateral Effects
- ❑ **DESCRIPTION:**
 - Delivery and Fill Concepts Being Assessed
- ❑ **SCHEDULE:**
 - FY05: Planned Phase I - 9-Month DOD Study
 - FY 07/08: Phase 2, If Required



URBAN / CLOSE AIR SUPPORT

□ OBJECTIVE:

- Capability to Attack Urban/CAS Targets

□ REQUIREMENT:

- Precision, Standoff, Adverse Weather, Single/Multiple Shot, Minimal Collateral Damage
- Fighter and AFSOC Aircraft



USAF F-35 CAS WEAPON

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□ OBJECTIVE:

- F-35 "Point and Shoot" Capability Suitable for Close Air Support (CAS) and Forward Air Control - Airborne (FAC-A) Missions

□ ASSUMED REQUIREMENTS:

- Launch & Leave, Post Release Guidance, Third Party Guidance, Guide on Coord, Min Employment Altitude, Stand-Off Range, Internal/External Carriage, Time of Flight

□ DESCRIPTION: New Capabilities Rqmts Through the JCIDS

- Develop a CAS Weapons Roadmap for F-35
- Synch Rqmts with CAF 2025 Flt Plan and POM Submissions
- Multiple current inventory and future weapons being assessed

□ SCHEDULE:

- FY 06 - Initial Capability Document (ICD)



VERY SMALL MUNITION

Capabilities Integration Direct

(VSM)

□ **OBJECTIVE:**

- Ability to Attack Urban/CAS Targets with Multiple Effects, Low Collateral Damage

□ **REQUIREMENT:**

- Persistent System of Systems ICD
- Precision, Standoff, Adverse Wx, Affordable, Single/Multiple

□ **DESCRIPTION:**

- Small, GPS-INS/Laser Guided Munition
- Blast-Frag, Shape Charge Variants
- Short Flight Time, Standoff Range
- Integration - Future AFSOC Aircraft

□ **SCHEDULE:**

- FY08 POM Submittal



LONG RANGE STRIKE

Capabilities Integration Direct

□ OBJECTIVE:

- Capability To Achieve Desired Effects Rapidly, Persistently, On Any Target, In Any Environment, Anywhere, At Any Time

□ REQUIREMENT:

- **Phase I - Bomber Forces Upgrade:** Link-16 Connectivity, Radar, Targeting, Increased Precision, Stand-Off
- **Phase II - Field Mid-Term Strike Capability:** Responsive, Persistence - L/O, Speed, Intra-Theater Range, Survivability, Improved Lethality, GIG
- **Phase III - Field Long Range Strike Capability -** Responsive, Persistent - L/O, Speed, Long Range, Survivable, GIG, Transformational Technologies

NEXT GENERATION LONG RANGE STRIKE

AOA

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□ **NGLRS ANALYSIS OF ALTERNATIVES (AOA)**

- **ACC and ASC-Led AOA To Begin Oct 05**
- **AAC Assessing Candidate Weapon Concepts**
- **Technology Roadmap**
- **Digital System Modeling To Support AOA Modeling & Simulation**

□ **FOCUS ON:**

- **Stand-off, Extended Range Munitions, Including High Speed**
- **Persistence Weapons**
- **Close Controlled Strike With Limited Collateral Damage**
- **Maritime Interdiction (Stand-off And Direct Attack)**



PERSISTENT ATTACK CONCEPTS

Capabilities Integration Direct

□ OBJECTIVE:

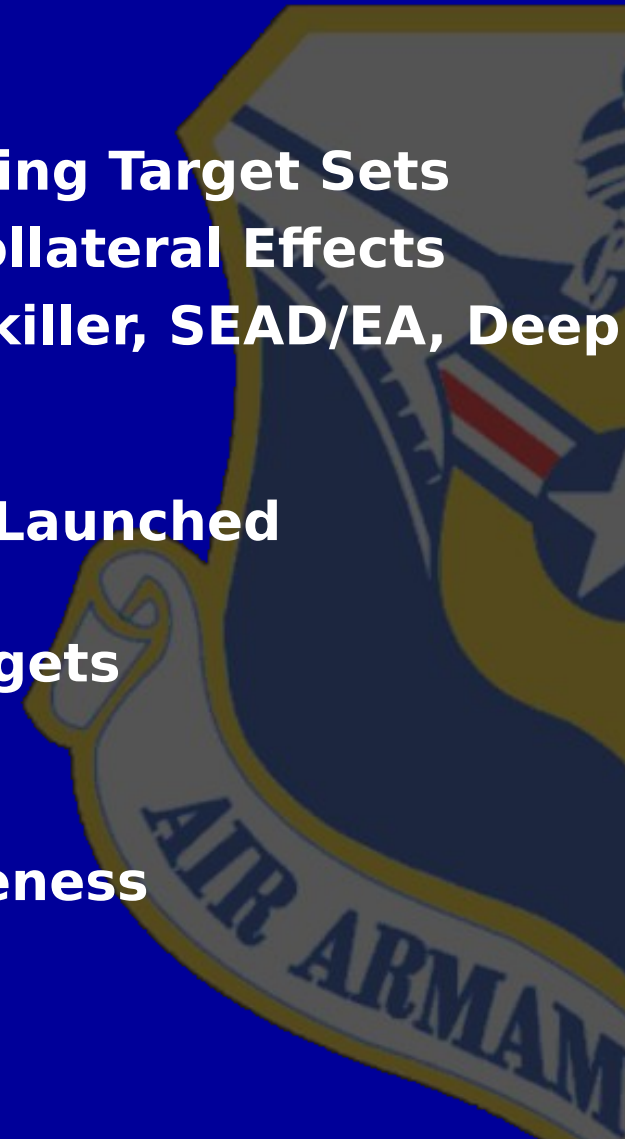
- Capability To Rapidly Adapt To Changing Target Sets
- Reduced Response Time, Minimize Collateral Effects
- Multi-Mission: Armed Recon, Hunter-killer, SEAD/EA, Deep

□ ASSUMED REQUIREMENTS:

- Smaller, Precise, Network-Smart, Air Launched Weapons
- Defeat Urban And Limited Access Targets
- Dominate, Loiter, Provide Situational Awareness, Controlled Autonomy
- Exploit Predictive Battle Space Awareness

□ DESCRIPTION:

- Numerous Concepts Being Assessed



HIGH SPEED WEAPONS

Capabilities Integration Direct

□ **OBJECTIVE:**

- Time Critical Strike Capability Against Targets Including Theater Ballistic Missiles (TBMs) / Transportable Erector Launchers (TELs), Integrated Air Defense System (IADS), Large Surface Combatants

□ **ASSUMED REQUIREMENTS:**

- Moving Target Capable, Cruise Speed of > Mach 4, Time of Flight < 15 Minutes, Air Launched

□ **DESCRIPTION:**

- Scramjet or Dual Combustion Ram Jet, GPS/INS, Networked DataLink, Seeker
- Navy Concept

□ **SCHEDULE:**

- FY05/06/07: JCIDS & Acquisition Activity
- FY08: SDD Start (Navy)
- FY14: IOC



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DIRECTED

Capabilities Integration Direct

- ❑ **Firepower That is Instantaneous, Precise and Virtually Inexhaustible**
- ❑ **DE Technology Can Be Applied to All Mission Areas to Greatly Increase Combat Capability**
- ❑ **Many Components and Subsystems Have Been Matured and Demonstrated**
- ❑ **System Level Maturation Required to Field Future DE Enabled Weapon Systems**

Directed Energy

DE ARMAMENT

Capabilities Integration Direct

INITIATIVE

AAC Initiated Process to Facilitate DE Transition Into Armament Applications

□ Objective:

- **Bring Labs, Warfighters and Industry Together**
 - **Help Warfighters Visualize Using DE to Create Desired Effects on Battlefield Cheaper and/or Better Than Conventional Systems**
 - **Connect Warfighter, Industry, Acquisition and Lab Communities to Speed Transition**

□ Outcome:

- **Identify Areas for Further Investment and Demonstration**
- **Recommendation in Fall 05 of System Level**



SUMMAR

Y
Capabilities Integration Direct

- **Tomorrow's Warfighting Solutions Begin Today**
- **AAC Is Planning Today To Meet Capability Objectives Tomorrow**
- **Continuing Planning and Industry Perspective Will Be Highlighted At NDIA Armament Symposium Oct 4-5, 2005**

**LAST
SLIDE**